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Environmental Participation and Environmental Motivation

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Abstract:

We explore whether environmental motivation affects environmental behavior by focusing on volunteering. The paper first introduces a theoretical model of volunteering in environmental organizations. In a next step, it tests the hypothesis working a large micro data set covering 32 countries from both Western and Eastern Europe using several different proxies to measure environmental motivation. As a robustness test we also explore the relationship at the macro level extending the number of countries investigated. Our results indicate a strong positive relationship between environmental motivation and individuals' voluntary engagement in environmental organizations.

JEL Classifications: D11, H41, H26, H73, D64

Keywords: environmental participation, environmental motivation, environmental morale, pro-environmental attitudes, social capital

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I. INTRODUCTION

Why is it that a growing number of studies are devoted to examining individual environmental preferences, proposing that individuals' environmental morale or attitudes could help to reduce environmental degradation or the problems of free riding associated with public goods (see, for example Frey and Stutzer, 2006)? One motivation for such a suggestion is that control and deterrence models predict a far lower level of compliance than that actually observed. In many countries, the level of government control is too low to explain the high degree of environmental compliance.

However, there are few studies exploring empirically whether such pro-environmental attitudes exert a positive effect on either environmental behavior or involvement in environmental organizations. The presence of such norms or environmental motivation influencing the willingness to protect the environment is especially useful in situations where it is extraordinarily expensive to arrange a regulatory enforcement regime. A desirable and positive side effect of voluntary compliance is that it lowers the cost of government operations aimed at ensuring public good provision (Slemrod 2002).

We focus on the individuals' participation in environmental organizations because it is a cooperative behavior that can improve social capital, especially the network component[1]. Recent studies in the area of ecological economics have shown that social capital indeed influences transaction costs and can also have some bearing on the effectiveness of public environmental policies (see Torgler and Garcia-Valiñas, 2007).

[1] See Grootaert and van Bastalaer (2002, p.41-66)

These results suggest that "environmental conflicts can be resolved by making collective choices that are implemented by establishing, changing or reaffirming governance institutions" (Paavola and Adger, 2005, p. 364). The adaptive capability of societies is strongly linked to their ability to act collectively (Adger, 2003), thus the existence of social capital is important when dealing with new environmental scenarios, such as the threat of climate change, or for coping with the impact of environmental disasters, such as droughts or floods. Katz (2000) showed that social capital is related to the ability to address several market failures regarding common property natural resources.

The strength of this paper lies in exploring the impact of environmental motivation on environmental behavior. We focus on individuals' voluntary engagement in environmental organizations and test its impact with the use of both a large micro data set covering 32 European countries and a macro data set that also works with a large set of 52 countries. Such breadth and depth of data allows exploration of the different channels through which individuals express their environmental motivation via pro-environmental attitudes, and we capitalize on this opportunity by exploring two variables that measure voluntary environmental participation (i.e. membership and voluntary work).

The outline of the paper is as follows. Section 2 of the paper first discusses the theoretical background and proposes a model of volunteering. Section 3 introduces the data set and the key variables. The empirical findings are presented in Section 4 and some concluding remarks are offered in Section 5.

II. THEORETICAL CONSIDERATIONS

What is the meaning of 'pro-environmental behavior'? Kollmuss and Agyeman (2002) define it as actions taken by an individual in consciously seeking to minimize the negative impact of human activities on the environment and Jensen (2002) refers to those personal actions that are directly related to environmental improvements. Some daily activities, such as minimizing resource and energy consumption, reducing and recycling waste, or using public transport are private actions which contribute to the preservation of nature.

In the same way, participation in environmental organizations can be seen as a kind of pro-environmental behavior and is highly relevant in ensuring the efficacy of environmental policies which require behavioral changes. As Handy (2001, p.648) pointed out, "much of the initial impetus towards change for protecting environmental quality came from concerned individuals who have often come together and formed voluntary non-profit associations to collectively address environmental concerns. Their persistent lobbying and advocating for environmental protection has changed public sentiment, thereby convincing government and businesses to pay attention to their demands. (…) Nevertheless, many environmental nonprofit organisations continue to play an important role in advocating a better environmental quality".

Civil engagement in voluntary organizations is gaining increased attention from researchers; nonetheless the causes of environmental participation are still relatively unknown. The benefit of participation in voluntary activities is the creation of social output that would per se require paid resources (Freeman, 1997). Pretty and Ward (2001)

showed that the creation of active pro-environmental groups was significant for solving certain local environmental problems[2]. Our study will not only explore the gender, age and parental effect, but will also show who is likely to participate and whose priorities and values are best promoted by voluntary work in environmental organizations. However, to date only a few studies have analyzed the factors impacting on the participation in environmental organizations (Mohai, 1992; Thompson and Barton, 1994; Martinez and McMullin, 2004). The advantage of focusing on direct participation in environmental organizations is that individuals' behavior can be measured. Moreover, it builds a bridge between the social capital literature that focuses on volunteering and the environmental literature on pro-environmental preferences.

The relevance of looking beyond the neoclassical approach in understanding seemingly non-rational behavior is demonstrated in the tax compliance literature and the analyses of tax paying behavior. In seeking to explain the reasons why citizens comply with tax regulations given that the probability of being audited is extremely low, it is clear that deterrence mechanisms alone cannot explain the level of observed compliance in this regard (Torgler 2007). Similarly, the level of formal deterrence is too low to explain why, for example, people do not litter more often. Invoking the power of social norms helps to resolve such a puzzle, but further empirical evidence is required to determine whether environmental attitudes affect environmental actions. We note that previous literature has shown how values and attitudes can affect individual behavior in more general sense (Ajzen and Fishbein, 1980; Lewis, 1982). Thus, it is useful to explore whether the decision to participate in environmental organizations is driven by a set of

[2] Those authors analyzed some environmental organizations in rural communities. They found an evolution from reactive-dependence groups (static and created exclusively in reaction to a threat or a crisis), towards awareness-interdependence groups (more dynamic and interactive).

attitudes and norms. Our theoretical model is strongly influenced by previous studies on altruism (Andreoni, 1990) and moral motivation[3] in a public good environment (Brekke et al. 2003).

When considered from an economic perspective, environmental participation "exemplifies an individual's voluntary effort to provide an environmental public good" (Clark et al. 2003, p. 238). An economic analysis also prompts the question: why do people take actions (incurring private costs) that result in collective benefits? While the traditional theoretical models predict a free-rider effect in the private provision of public goods, in practice we find clear evidence to the contrary (Andreoni, 1988; Piliavin and Charng, 1990). Andreoni (1990, p. 465) developed an important model of impure altruism as a means of understanding donations to public goods. He assumes an economy with only one private good and one public good. The individual utility donation function depends on the consumption of a private good (x_i), the total amount of a public good (G), and the individual's gift to the public good (g_i). Thus, $Ui = U(x_i, G, g_i)$. This allows the author to differentiate two cases, namely a purely altruistic situation $U(x_i, G_i)$ when the individual cares nothing for the private gift, and $U(x_i, g_i)$ when the individual is motivated to give only by a "warm-glow" outcome (purely egoistic). The cases in between are defined as an impurely altruistic behavior. However, he acknowledges that there are important alternative approaches to such an impure altruism model, namely moral or

[3] The literature has identified a "*free-ride*" effect, in order to explain why people do not participate actively in voluntary organizations. Thus, if an individual perceives that he/she can benefit from any successful outcome of collective action, whether or not they contributed to achieve it, then he/she can decide not to contribute actively at all. According to Lubell et al. (2006, p. 150), when collective action is analyzed, is necessary to "incorporate the logic of free riding by acknowledging that the contribution of a single individual only raises the probability of successfully providing a public good by small amount. From this perspective, how individuals perceive their own personal influence on collective outcomes is the critical value". So, the free-rider effect is a significant and additional argument that clarifies why people can fail to participate actively in environmental groups.

group-interested behavior. In line with this suggestion, Brekke et al. (2003) implement moral motivation in their model by working with a social welfare function to determine the morally ideal effort, where individuals share a utilitarian moral philosophy. For simplicity, they assume that the labor supply and the income are exogenously fixed. In a next step, individuals maximize their utility in a benefit-cost environment, trading the benefits of maintaining a self-image as socially responsible individuals against the costs. The desire to improve self-image induces an improved effort towards upholding beliefs that are perceived to be morally right.

Keeping in mind the theoretical work outlined above, we examine the motivation for environmental participation by developing a model of volunteering. We assume that individual's utility function is given by

$$U_i = U(x_i, l_i, G, \lambda_i) \tag{1}$$

where x_i is individual *i*'s consumption of private goods, l_i represents leisure, *G* is the public good of increasing environmental quality, and λ_i the utility from participating voluntarily in an environmental organization.

Voluntary work is time consuming and subject to opportunity costs. Thus, v_i represents the hours spent for voluntary work in an environmental organization. Individuals' consumption can therefore be written as an income constraint, defined by the product of the wage rate *w* and the working hours $T - l_i - v_i \geq 0$, where *T* is the time constraint (available time):

$$x_i = w_i(T - l_i - v_i) \tag{2}$$

The total amount of public good (environmental quality) depends on the public provision G_p and private provision $\sum_i g_i$, assuming identical individuals N:

$$G = G_p + \sum_i g_i \tag{3}$$

where

$$g_i = \alpha v_i \tag{4}$$

is individual i's production function that depends on the level of voluntary participation in an environmental organization and an efficiency parameter α . Since we have identical individuals $\sum_i g_i$ is equal to Ng_i . Therefore, we can write:

$$G = G_p + N\alpha v_i \tag{5}$$

The utility from participating in a voluntary environmental organization (λ_i) has the following form:

$$\lambda_i = \quad m_i v_i - (m_i - v_i)^2 \tag{6}$$

where m_i is a factor that measures an individual's motivation to contribute to the environment ($m_i \geq 0$). It measures what the individual believes to be the morally ideal environmental involvement. Thus, participating in voluntary organizations is correlated with individuals' motivation towards contribution and this enhances an individual's utility function (see first term). On the other hand, if the participation in voluntary organizations is l-ower than the morally ideal environmental involvement ($v_i < m_i$), individuals also experience moral or psychic costs (see second term). This induces a feeling of guilt and shame.

We also assume that the utility function is additively separable in $x_i, l_i, G,$ and λ_i. The utility function thus becomes:

$$U_i = x_i + l_i + G + \lambda_i \tag{7}$$

Considering (2) to (6) leads to the following utility function:

$$U_i = w_i(T - l_i - v_i) + l_i + (G_p + N\alpha v_i) + m_i v_i - (m_i - v_i)^2 \tag{8}$$

An individual maximizes utility (8) subject to her voluntary involvement in an environmental organization (v_i). Setting the first order condition $U_i^{'} = \frac{\partial U_i}{\partial v_i}$ equal to 0 leads to the following condition for the optimal effort engagement:

$$v_i = \frac{-w_i + N\alpha + 3m_i}{2} \tag{9}$$

Eq. (9) suggests that environmental participation will increase with an increase in individual's motivation to contribute. Thus, we can develop the following main hypothesis:

Hypothesis 1: *A higher level of environmental motivation due to higher environmental moral standards leads to a stronger voluntary involvement in environmental organizations.*

Moreover, Eq. (9) also indicates that an increase in the wage rate changes the allocation of time. An increase leads to a decline of voluntary work in environmental organizations. However, such a negative effect is reduced with a higher level of efficiency in the contribution of the private provision of the public good, α multiplied by the number of individuals in the society. It should be noted that we have implemented a consumer model. One may argue that individuals are also volunteering to accumulate human capital with the intention of increasing future income through the acquisition of certain types of skills and through creating and developing networks that enhance their human capital

(Hackl et al., 2007). This would require the use of an investment model with a dynamic structure. However, we believe that our consumer model is useful and appropriate when exploring moral values.

III. DATA

We use two variables that measure involvement in a voluntary environmental organization, namely membership and doing unpaid work:

> *Please look carefully at the following list of voluntary organizations and activities and say which, if any, are you currently doing unpaid voluntary work for: conservation, the environment, ecology, animal rights (1=yes, 0 otherwise).*

> *Please look carefully at the following list of voluntary organizations and activities and say which, if any, do you belong: conservation, the environment, ecology, animal rights (1=mentioned, 0= not mentioned).*

To ensure the robustness of results, we use several dependent variables that can be seen as a proxy *m*, namely the motivation to contribute to the environment. The first two variables measure *m* in the following way:

> *I would give part of my income if I were certain that the money would be used to prevent environmental pollution (0=strongly disagree, 3=strongly agree)*

I would agree to an increase in taxes if the extra money were used to prevent environmental pollution (0=strongly disagree, 3=strongly agree)

Although we are not conducting a contingent valuation study (CV), these two questions offer the chance to explore our parameter *m*. However, the question is not free of problems and can be criticized in several ways. The statement is relatively vague: "environmental pollution" is not clearly specified, and neither is the level of improvement. Similarly, the proportion of income to be spent and the degree of tax increase are not clarified. Therefore the respondents are not aware of how much they would hypothetically have to contribute[4]. The consequences of taxation are not mentioned and no information is provided regarding the extent to which income tax, value added tax or other taxes are supposed to increase. Thus, it is not clear who will bear the highest tax burden. Such unspecified questions regarding the payment schemes will increase the variance in responses, but on the other hand, may influence the willingness to contribute (Witzke and Urfei, 2001). Nevertheless, despite these possible shortcomings, an unspecified statement still helps to measure moral values and to reduce strategic behavior via influencing the quantity or quality of environmental goods. Providing a more concrete scenario could encourage respondents to intentionally indicate a false willingness to contribute to ensure that the outcome of the study matches their own preferences (Hidano et al., 2005). When neither specific goods nor quantitative values are used, the attributes of the environmental goods in question do not have to be

[4] It has been shown that the preferences to protect the environment (regarding causes and consequences of environmental damages) depend on the level of information included in the questionnaire (Bulte et al., 2005).

thoroughly explained to ensure that respondents understand the proposition and respond with the appropriate willingness to sacrifice income and accept an increase in taxes[5].

In a next step we will explore a variable that measures environmental attitudes, but takes into account the possibility that people may have an incentive to free-ride (profit without incurring costs). We would predict that such a variable would lead to contradictory results (compared to the previous two variables):

> *The Government has to reduce environmental pollution but it should not cost me any money (0=strongly disagree, 3=strongly agree)*

Our multivariate analysis includes a vector of control variables, which are explained in the Appendix. Previous research in environmental economics and social norms demonstrates the relevance of considering such socio-demographic factors, formal and informal education and participation in an environmental organization (see Torgler and Garcia-Valiñas, 2007; Torgler, 2007). We also differentiate between the two regions of Europe (i.e. Western and Eastern Europe) to account for effects of the reform process in the transition countries. The rapid collapse of institutional structures in Eastern European countries produced a vacuum in many, if not all, of these countries. This led to large social costs, especially in terms of worsening income inequalities, increasing poverty and poor institutional conditions resulting from uncertainty and high transaction costs. Torgler (2003) and Alm et al. (2006) show that such circumstances have an impact on social norms.

[5] For a detailed discussion regarding possible survey biases see Carson and Mitchell (1995).

IV. EMPIRICAL RESULTS

The following micro level analysis uses data provided by the European Values Survey (EVS) 1999/2000, which is a European-wide investigation of socio-cultural and political change. The survey collects data on the basic values and beliefs of people throughout Europe. The EVS was first carried out from 1981 to 1983, then in 1990 to 1991 and again in 1999 through 2001, with an increasing number of countries participating over time. The methodological approach is explained in detail in the European Values Survey (1999) source book, which provides information on response rates, the stages of sampling procedures, the translation of the questionnaire, and field work, along with measures of coding consistency, reliability of data, and data checks. All country surveys are conducted by experienced professional survey organizations, with the exception of Greece. Interviews are face-to-face and those interviewed are adult citizens aged 18 years and older. Tilburg University coordinates the project and provides the guidelines to guarantee the use of standardized information in the surveys and the national representativeness of the data. To avoid framing biases, the questions are asked in a prescribed order. The response rates vary from country to country with an average response rate of around 60 percent.

Because EVS poses an identical set of questions to individuals in various European countries, the survey provides a unique opportunity to empirically examine our hypotheses. We are able to employ a large data set considering 32 representative national samples. EVS has been designed as a wide-ranging survey, thereby reducing the danger of framing effects when compared with many other surveys that focus entirely on

environmental questions. A further advantage of using this extensive data set is the ability to explore a large number of dependent variables.

In the macro analysis we not only explore the EVS but also the World Values Survey (WVS) using the same wave. EVS can be seen as a subpart of the WVS, although one should note that the questions are not always fully identical. For example, in the empirical micro analysis we are also going to use .data that has not been collected in the WVS.

Economists are increasingly using survey data in areas of research such as those dealing with social capital, corruption, happiness and tax compliance. These literatures explore the causes of attitudes (see, e.g., Frey and Stutzer, 2002; Brewer and Steenbergen, 2002; Uslaner, 2004; Brewer et al., 2004; and Chang and Chu, 2006 and Torgler, 2008).

In general, a probit estimation is appropriate when working with information such as our two dependent variables that measure participation in environmental organizations. We calculate the marginal effects to measure the quantitative effect of a variable, because the equation is nonlinear. Marginal effects indicate the change in the probability of individuals having a specific level of environmental preferences when the independent variable increases by one unit. Weighted estimates are conducted to ensure that the samples correspond to the national distribution.[6] Furthermore, answers such as 'don't know' are eliminated in all estimations, as are any missing values.

Table 1 presents the findings regarding membership in an environmental organization. In the first three specifications we explore our key environmental motivation variables *m* separately and the fourth includes all the three variables in the

[6] The weighting variable is provided by the EVS.

specification. The results from the first three specifications indicate that all the *m* proxies are statistically significant. The first two have a positive impact, and the third has a negative impact. Thus, *hypothesis 1* cannot be rejected. A higher level of environmental motivation due to higher moral standards induces voluntary involvement in environmental organizations. The negative coefficient in specification (3) is consistent with our prediction as it measures individuals' interest in free-riding. A higher willingness to free-ride is negatively correlated with environmental engagement. The variable WILLINGESS TO GIVE INCOME has the strongest effect. An increase in the scale by one unit raises the probability of participating in an environmental organization by 2.5 percentage points. The importance of this variable is also visible once you include all three variables in the regression. The coefficient is still statistically significant at the 1% level with a marginal effect of 1.9 percentage points. On the other hand, the coefficient for the variable WILLINGNESS TO INCREASE TAXES is only statistically significant at the 10% level, and also shows a decrease in the marginal effects. Overall, these first results indicate that environmental motivation matters.

Looking at the control variables we can see that women are more likely to be members of environmental organizations. Age is also positively correlated with being a member. Overall, the age group AGE 50-59 shows the strongest level of environmental participation (largest marginal effects). Having a child is negatively correlated with environmental participation, possibly because time restrictions may act as a barrier to being involved in environmental organizations. Education and political interest, measured as political discussion, have a positive impact on the probability of being a member in an environmental organization. The time restriction argument may also be invoked when

focusing on the marital status. Those who have never before been married, and those who are separated exhibit the highest probability of participating in environmental organizations. Moreover, when taking employment status into account, we observe that part time employees are more likely to be members. There is also the tendency for self-employed individuals to be more active in environmental organizations, probably because of the opportunity to improve their networks. On the other hand, the time restriction argument fails when it comes to the unemployed and retired, as they are less likely to be members than are full-time employees. Finally, we also observe that people in Western Europe are more likely to engage with environmental organizations through membership. The marginal effects are quite large (more than 4 percentage points).

In *Table 2* we explore a second aspect, namely doing unpaid work for environmental organizations. The results are quite similar. All the proxies for *m* in specification (5) to (7) are statistically significant. The strongest effects are again observable for the variable WILLINGNESS TO GIVE INCOME. However, it should be noted that compared to *Table 1* we find lower quantitative effects. Specification (8) also shows that the coefficient for the variable CONTRIBUTE AT NO COSTS is no longer statistically significant.

Looking at the control variables we find that contrary to the results on membership, there is now a negative correlation between environmental participation and being a woman. Thus, women are more likely to be a member in an environmental organization, but are less likely to do unpaid work. However, it can be argued that women might be more active in community-based and neighborhood organizations which address local environmental issues, while men are more likely to participate in formal

environmental organizations. Our survey question captures more of the latter than the former – for this reason, our results may not actually conflict with findings to the contrary. Moreover, it should be noted that women (particularly younger women) would face other restrictions on their ability to participate in voluntary organizations, as they are often more heavily involved in time intensive household activities.

The age effect is now less visible, but we still observe that the AGE group 50-59 has the strongest probability of doing unpaid work and that both education and political interest have a significant and positive impact on environmental engagement. Moreover, we also observe that the "never married" individuals are the most active in environmental organizations. On the other hand, the parental effect is now less obvious and it appears that only retired people are significantly less willing than the full time-employed individuals to be active in environmental organizations through unpaid work. Finally we again observe that Western European citizens are more likely to be environmentally engaged. However, the effect is not as strong as for membership and the coefficient is no longer statistically significant in all specifications.

In the next two tables we extend the previous regression by including individuals' economic situation with two dummy variables. It should be noted that the number of observations in *Table 3* and *4* strongly decreased after controlling for individuals' economic situation. The results indicate that a higher level of economic status leads to a higher probability of being a member and doing unpaid work in environmental organizations. It seems that wealthier citizens have a higher demand for a clean environment and less environmental damages and thus a stronger incentive to actively contribute to the environment by participating in a voluntary organization. Thus, such a

result is not consistent with our Eq. (9). However, it should be noted that the economic situation variable may not only cover the current wage but also the accumulated wealth over time. Nevertheless, we observe that the results obtained previously remain robust.

Table 5 explores the potential endogeneity problems. One can argue that being involved in an environmental organization enhances pro-social environmental attitudes. To control for such a problem, we will use an instrumental approach to check the robustness of the results. A suitable instrument must be contemporaneously uncorrelated with the error term but must be highly correlated with membership in a voluntary environmental organization. Our instrument (an index of perceived level of social non-compliance with well-known social rules[7]) satisfies these conditions.

For simplicity, we only report the results on membership involvement in *Table 5*. In previous studies we have seen that the perceived level of compliance affects individuals' intrinsic motivation to contribute and cooperate (Frey and Torgler 2008, Torgler, Frey and Wilson 2008, Dong, Dulleck and Torgler 2008). The extent to which others comply with social rules systematically influences the individual willingness and motivation to contribute. Additionally, Owen and Videras (2006) found a positive and significant relationship between civic cooperation and/or allowing free-ride behaviors and environmental attitudes and intentions. They concluded that civic cooperation was a key factor to improving pro-environmental attitudes, especially in low income countries.

[7]Aggregated index of the following questions: According to you, how many of your compatriots do the following: Claming state benefits to which they are not entitled; Driving under the influence of alcohol; Speeding over the limit in built-up areas (each scale from 4=almost all to 1=almost none).

The table reports the results of two-stage least squares (2SLS) estimations together with the first stage regressions. The results indicate that attitudes have a strong and significant impact on environmental involvement. In addition, *Table 5* also shows that the instruments and the *F*-tests for the instrument exclusion set in the first-stage regression are statistically significant. There is a negative correlation between our environmental motivation variables and the perceived level of dishonest behavior. We also report the Anderson canonical correlations LR test for the relevance of the instruments, checking the relevance of the excluded instruments. A rejection of the null hypothesis indicates that the model is identified and that the instruments are relevant (see Hall et al., 1996). Moreover, we show results of the Anderson-Rubin test indicating that the endogenous variables are jointly statistically significant. *Table 5* reports that in all cases the Anderson canonical correlations LR test shows rejection of the null hypothesis, which indicates that the models are identified and that the instruments are relevant. The Anderson-Rubin test is also statistically significant and has the advantage of being robust to the presence of weak instruments.

Finally, we test in *Table 6* and *7* whether the impact of environmental motivation on environmental involvement is driven by a subset of countries and present the results for the coefficients for environmental attitudes in both tables using the specifications in the first two tables (without controlling for the economic situation). Each table is a summary of 96 regressions conducted within 32 countries. *Table 6* focuses on membership participation, while *Table 7* explores unpaid work as a dependent variable. In general we observe differences between the countries. *Table 6* shows that the coefficient of the variable WILLINGNESS TO GIVE INCOME is statistically significant

in 25 out of 32 cases, and the strongest effect is observed for the Netherlands. An increase in the WILLINGNESS TO GIVE INCOME by one unit increases the probability of being a member in an environmental organization by almost 10 percentage points. A strong quantitative effect is also observed in Austria, Belgium, Denmark and Greece, however the effects are generally lower among Eastern European countries. We find a similar result for the variable WILLIGNESS TO INCREASE TAXES. The coefficient is statistically significant in 24 out 32 cases. The strongest effect can also be found in the Netherlands (9.1 percentage points), followed by Denmark (4.4 percentage points) and Greece (3.4 percentage points). The results are less strong when focusing on willingness to free-ride. However, here we also observe the strongest negative impact for the Netherlands (8.9 percentage points), followed by Denmark (4.2 percentage points) and Belgium (4.2 percentage points). Looking at *Table 7* and therefore at unpaid work we find that the relationship is less strong when using unpaid work instead of membership participation as a dependent variable. Thus, environmental motivation helps to substantially increase the number of memberships, but is less strong when individuals are required to do unpaid work for environmental organizations. The coefficient for the variable WILLIGNESS TO GIVE INCOME is now only statistically significant in 18 out 32 regressions. The quantitative effects are also substantially smaller. Greece reports the strongest effect with a marginal effect of 3.5 percentage points. Moreover, it should be noted that the same picture can be found for the other two motivational questions.

Table 1: Determinants of Being A Member in Environmental Organizations

	WEIGHTED PROBIT											
	(1)			*(2)*			*(3)*			*(4)*		
	Coeff.	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*
Environmental Motivation (m)												
WILLINGNESS TO GIVE INCOME	0.313***	19.07	0.025							0.250***	11.97	0.019
WILLINGNESS TO INCREASE TAXES				0.223***	14.81	0.019				0.032*	1.70	0.002
CONTRIBUTE AT NO COSTS							-0.246***	-17.43	-0.020	-0.177***	-11.79	-0.014
Gender												
FEMALE	0.054**	1.97	0.004	0.067**	2.47	0.006	0.059**	2.15	0.005	0.056**	1.99	0.004
Age												
AGE 30-39	0.056	1.22	0.004	0.048	1.07	0.004	0.065	1.44	0.005	0.056	1.19	0.004
AGE 40-49	0.115**	2.38	0.010	0.087*	1.82	0.008	0.110**	2.28	0.010	0.112**	2.25	0.009
AGE 50-59	0.237***	4.65	0.022	0.216***	4.31	0.021	0.251***	4.93	0.024	0.243***	4.62	0.022
AGE 60-69	0.189***	2.97	0.017	0.175***	2.77	0.016	0.212***	3.32	0.020	0.198***	3.02	0.018
AGE 70+	0.238***	3.23	0.022	0.198***	2.68	0.019	0.213***	2.89	0.020	0.227***	2.96	0.021
Parental Effect												
CHILD	-0.104*	-1.90	-0.008	-0.120**	-2.19	-0.009	-0.117**	-2.15	-0.009	-0.108*	-1.91	-0.008
Formal and Informal Educ.												
EDUCATION	0.025***	12.02	0.002	0.025***	12.40	0.002	0.025***	12.18	0.002	0.022***	10.24	0.002
POLITICAL DISCUSSION	0.142***	7.01	0.011	0.151***	7.53	0.013	0.134***	6.64	0.011	0.114***	5.45	0.009
Marital Status												
WIDOWED	-0.103*	-1.69	-0.007	-0.159***	-2.60	-0.012	-0.143**	-2.37	-0.011	-0.133**	-2.08	-0.009
DIVORCED	-0.062	-1.25	-0.005	-0.065	-1.31	-0.005	-0.072	-1.44	-0.006	-0.062	-1.20	-0.005
SEPARATED	0.010	0.10	0.001	0.001	0.01	0.000	0.030	0.31	0.002	0.040	0.39	0.003
NEVER MARRIED	0.123***	3.24	0.010	0.121***	3.24	0.011	0.135***	3.58	0.012	0.128***	3.29	0.011
Employment Status												
PART TIME EMPLOYEE	0.141***	3.09	0.012	0.159***	3.54	0.015	0.158***	3.45	0.015	0.151***	3.22	0.013
SELFEMPLOYED	0.085	1.63	0.007	0.087*	1.67	0.008	0.086	1.63	0.008	0.096*	1.81	0.008
UNEMPLOYED	-0.099**	-1.97	-0.007	-0.091**	-1.82	-0.007	-0.076	-1.51	-0.006	-0.068	-1.32	-0.005

AT HOME	-0.114**	-2.19	-0.008	-0.105**	-2.06	-0.008	-0.087*	-1.69	-0.007	-0.094*	-1.76	-0.007
STUDENT	-0.041	-0.66	-0.003	-0.007	-0.12	-0.001	-0.037	-0.60	-0.003	-0.061	-0.96	-0.005
RETIRED	-0.252***	-3.96	-0.016	-0.227***	-3.61	-0.016	-0.206***	-3.30	-0.014	-0.219***	-3.37	-0.014
OTHER	0.138	1.48	0.012	0.170*	1.85	0.016	0.166*	1.80	0.016	0.151	1.59	0.013
Region												
WESTERN EUROPE	0.595***	20.91	0.047	0.554***	19.90	0.046	0.454	16.38	0.037	0.522***	17.99	0.040
Pseudo R2	0.101			0.086			0.093			0.114		
Number of observations	36086			36052			36237			34428		
Prob > chi2	0.000			0.000			0.000			0.000		

Notes: The reference group consists of MAN, AGE<30, NOT HAVE CHILDREN, MARRIED, FULL-TIME EMPLOYEE, EASTERN EUROPE. The symbols *, **, *** represent statistical significance at the 10%, 5% and 1% levels, respectively. Robust standard errors.

Table 2: Determinants of Unpaid Work in Environmental Organizations

	WEIGHTED PROBIT											
	(5)			*(6)*			*(7)*			*(8)*		
	Coeff.	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*
Environmental Motivation (m)												
WILLINGNESS TO GIVE INCOME	0.233***	10.45	0.009							0.204***	7.47	0.008
WILLINGNESS TO INCREASE TAXES				0.162***	7.89	0.007				0.045*	1.83	0.002
CONTRIBUTE AT NO COSTS							-0.091***	-4.83	-0.004	-0.028	-1.39	-0.001
Gender												
FEMALE	-0.100***	-2.79	-0.004	-0.085**	-2.40	-0.004	-0.092**	-2.61	-0.004	-0.094**	-2.55	-0.004
Age												
AGE 30-39	0.017	0.30	0.001	0.018	0.31	0.001	0.029	0.52	0.001	0.019	0.33	0.001
AGE 40-49	0.094	1.58	0.004	0.077	1.32	0.003	0.090	1.54	0.004	0.081	1.34	0.003
AGE 50-59	0.126*	1.96	0.005	0.127**	2.02	0.006	0.141**	2.22	0.006	0.116*	1.77	0.005
AGE 60-69	0.123	1.51	0.005	0.096	1.18	0.004	0.116	1.42	0.005	0.110	1.30	0.005
AGE 70+	0.101	0.92	0.004	0.055	0.50	0.002	0.035	0.31	0.001	0.049	0.42	0.002
Parental Effect												
CHILD	-0.106	-1.22	-0.004	-0.115	-1.35	-0.004	-0.101	-1.19	-0.004	-0.082	-0.94	-0.003
Formal and Informal Educ.												
EDUCATION	0.019***	7.13	0.001	0.020***	7.40	0.001	0.021***	7.90	0.001	0.019***	6.71	0.001
POLITICAL DISCUSSION	0.110***	3.98	0.004	0.119***	4.37	0.005	0.115***	4.28	0.005	0.099***	3.53	0.004
Marital Status												
WIDOWED	-0.023	-0.28	-0.001	-0.062	-0.74	-0.002	-0.060	-0.72	-0.002	-0.049	-0.56	-0.002
DIVORCED	-0.100	-1.50	-0.004	-0.091	-1.40	-0.003	-0.102	-1.56	-0.004	-0.103	-1.53	-0.004
SEPARATED	0.160	1.22	0.007	0.148	1.15	0.007	0.161	1.25	0.008	0.181	1.36	0.009
NEVER MARRIED	0.139***	2.92	0.006	0.138***	2.95	0.006	0.144***	3.07	0.007	0.144***	2.96	0.006

Employment Status												
PART TIME EMPLOYEE	0.064	0.99	0.003	0.071	1.13	0.003	0.080	1.28	0.004	0.065	0.99	0.003
SELFEMPLOYED	-0.036	-0.50	-0.001	-0.028	-0.39	-0.001	-0.041	-0.57	-0.002	-0.034	-0.46	-0.001
UNEMPLOYED	-0.114	-1.60	-0.004	-0.095	-1.35	-0.004	-0.103	-1.46	-0.004	-0.096	-1.31	-0.004
AT HOME	-0.163**	-2.13	-0.006	-0.137*	-1.85	-0.005	-0.140*	-1.88	-0.005	-0.161**	-2.07	-0.005
STUDENT	0.073	1.02	0.003	0.119*	1.69	0.005	0.100	1.43	0.005	0.068	0.94	0.003
RETIRED	-0.310***	-3.79	-0.009	-0.310***	-3.82	-0.010	-0.317***	-3.90	-0.010	-0.299***	-3.59	-0.009
OTHER	0.139	1.14	0.006	0.146	1.21	0.007	0.140	1.16	0.007	0.157	1.27	0.007
Region												
WESTERN EUROPE	0.092***	2.69	0.004	0.069**	2.04	0.003	0.024	0.69	0.001	0.069*	1.93	0.003
Pseudo R2	0.053			0.043			0.037			0.055		
Number of observations	36086			36052			36237			34428		
Prob > chi2	0.000			0.000			0.000			0.000		

Notes: The reference group consists of MAN, AGE<30, NOT HAVE CHILDREN, MARRIED, FULL-TIME EMPLOYEE, EASTERN EUROPE. The symbols *, **, *** represent statistical significance at the 10%, 5% and 1% levels, respectively. Robust standard errors.

Table 3: Income and Membership in Environmental Organizations

	WEIGHTED PROBIT											
	(9)			*(10)*			*(11)*			*(12)*		
	Coeff.	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*
Environmental Motivation (m)												
WILLINGNESS TO GIVE INCOME	0.295***	12.87	0.023							0.264***	9.15	0.020
WILLINGNESS TO INCREASE TAXES				0.196***	9.44	0.016				0.008	0.31	0.001
CONTRIBUTE AT NO COSTS							-0.205***	-10.37	-0.017	-0.141***	-6.77	-0.011
Gender												
FEMALE	0.083**	2.02	0.006	0.090**	2.22	0.007	0.084**	2.07	0.007	0.085**	2.03	0.007
Age												
AGE 30-39	-0.058	-0.88	-0.004	-0.055	-0.85	-0.004	-0.043	-0.66	-0.003	-0.059	-0.88	-0.004
AGE 40-49	0.011	0.16	0.001	-0.014	-0.20	-0.001	0.002	0.03	0.000	0.013	0.19	0.001
AGE 50-59	0.141*	1.93	0.012	0.120*	1.65	0.011	0.154**	2.09	0.014	0.148*	1.95	0.012
AGE 60-69	0.000	0.00	0.000	0.002	0.02	0.000	0.033	0.37	0.003	0.012	0.13	0.001
AGE 70+	-0.051	-0.45	-0.004	-0.102	-0.89	-0.008	-0.108	-0.93	-0.008	-0.099	-0.82	-0.007
Parental Effect												
CHILD	-0.044	-0.54	-0.003	-0.044	-0.54	-0.004	-0.039	-0.47	-0.003	-0.030	-0.35	-0.002
Formal and Informal Educ.												
EDUCATION	0.026***	7.54	0.002	0.026***	7.78	0.002	0.027***	7.95	0.002	0.024***	6.79	0.002
POLITICAL DISCUSSION	0.147***	4.99	0.012	0.155***	5.29	0.013	0.138***	4.70	0.011	0.123***	4.06	0.009
Economic Situation												
UPPER CLASS	0.142***	2.65	0.012	0.163***	3.06	0.015	0.156***	2.89	0.014	0.125**	2.26	0.010
MIDDLE CLASS	0.087**	2.04	0.007	0.092**	2.19	0.008	0.083*	1.95	0.007	0.079*	1.79	0.006
Marital Status												
WIDOWED	-0.067	-0.75	-0.005	-0.122	-1.35	-0.009	-0.095	-1.06	-0.007	-0.104	-1.09	-0.007
DIVORCED	-0.079	-1.06	-0.006	-0.094	-1.27	-0.007	-0.108	-1.43	-0.008	-0.088	-1.14	-0.006

SEPARATED	0.015	0.10	0.001	0.016	0.11	0.001	0.050	0.36	0.004	0.048	0.33	0.004
NEVER MARRIED	0.001	0.01	0.000	0.002	0.04	0.000	0.017	0.29	0.001	0.013	0.23	0.001
Employment Status												
PART TIME EMPLOYEE	0.088	1.21	0.007	0.108	1.53	0.010	0.093	1.29	0.008	0.091	1.22	0.007
SELFEMPLOYED	0.059	0.75	0.005	0.055	0.72	0.005	0.063	0.81	0.005	0.074	0.95	0.006
UNEMPLOYED	-0.029	-0.42	-0.002	-0.027	-0.38	-0.002	-0.017	-0.24	-0.001	-0.013	-0.18	-0.001
AT HOME	-0.176**	-2.40	-0.012	-0.158**	-2.20	-0.012	-0.146**	-2.01	-0.011	-0.172**	-2.27	-0.012
STUDENT	-0.108	-1.22	-0.008	-0.056	-0.65	-0.004	-0.105	-1.21	-0.008	-0.128	-1.42	-0.009
RETIRED	-0.041	-0.50	-0.003	-0.028	-0.34	-0.002	-0.022	-0.27	-0.002	-0.036	-0.43	-0.003
OTHER	0.092	0.64	0.008	0.093	0.65	0.008	0.101	0.71	0.009	0.116	0.79	0.010
Region												
WESTERN EUROPE	0.355***	8.06	0.026	0.301***	7.02	0.023	0.254***	5.93	0.019	0.334***	7.39	0.023
Pseudo R2	0.070			0.066			0.070			0.094		
Number of observations	18862			18887			18877			18155		
Prob > chi2	0.000			0.000			0.000			0.000		

Notes: The reference group consists of MAN, AGE<30, LOWEST CLASS, NOT HAVE CHILDREN, MARRIED, FULL-TIME EMPLOYEE, EASTERN EUROPE. The symbols *, **, *** represent statistical significance at the 10%, 5% and 1% levels, respectively. Robust standard errors.

Table 4: Income and Unpaid Work in Environmental Organizations

	WEIGHTED PROBIT											
	(13)			*(14)*			*(15)*			*(16)*		
	Coeff.	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*	*Coeff.*	*z-Stat.*	*Marg.*
Environmental Motivation (m)												
WILLINGNESS TO GIVE INCOME	0.231***	8.06	0.010							0.212***	5.98	0.009
WILLINGNESS TO INCREASE TAXES				0.153***	5.77	0.007				0.008	0.26	0.0003
CONTRIBUTE AT NO COSTS							-0.138***	-5.44	-0.006	-0.084***	-3.18	-0.003
Gender												
FEMALE	-0.158***	-3.04	-0.007	-0.144***	-2.80	-0.006	-0.145***	-2.80	-0.006	-0.155***	-2.90	-0.006
Age												
AGE 30-39	0.011	0.14	0.000	0.009	0.11	0.000	0.027	0.34	0.001	0.015	0.18	0.001
AGE 40-49	0.006	0.06	0.000	-0.007	-0.08	0.000	0.005	0.06	0.000	0.001	0.01	0.000
AGE 50-59	0.099	1.09	0.004	0.088	0.99	0.004	0.111	1.23	0.005	0.089	0.95	0.004
AGE 60-69	0.040	0.36	0.002	0.016	0.15	0.001	0.038	0.34	0.002	0.030	0.26	0.001
AGE 70+	0.052	0.35	0.002	0.012	0.08	0.001	-0.030	-0.19	-0.001	-0.013	-0.08	-0.001
Parental Effect												
CHILD	-0.042	-0.35	-0.002	-0.039	-0.33	-0.002	-0.016	-0.14	-0.001	-0.005	-0.04	0.000
Formal and Informal Educ.												
EDUCATION	0.022***	5.43	0.001	0.023***	5.62	0.001	0.023***	5.68	0.001	0.021***	4.85	0.001
POLITICAL DISCUSSION	0.064*	1.68	0.003	0.066*	1.78	0.003	0.055	1.48	0.002	0.039	1.01	0.002
Economic Situation												
UPPER CLASS	0.237***	3.58	0.012	0.254***	3.91	0.014	0.255***	3.83	0.013	0.241***	3.54	0.012
MIDDLE CLASS	0.153***	2.79	0.007	0.156***	2.88	0.007	0.161***	2.93	0.007	0.166***	2.95	0.007
Marital Status												
WIDOWED	0.029	0.25	0.001	-0.006	-0.05	0.000	0.011	0.09	0.000	-0.007	-0.06	0.000
DIVORCED	-0.077	-0.85	-0.003	-0.085	-0.94	-0.003	-0.106	-1.16	-0.004	-0.095	-1.03	-0.004

SEPARATED	0.082	0.45	0.004	0.075	0.42	0.004	0.102	0.56	0.005	0.104	0.55	0.005
NEVER MARRIED	0.052	0.76	0.002	0.056	0.83	0.003	0.071	1.02	0.003	0.069	0.99	0.003
Employment Status												
PART TIME EMPLOYEE	0.038	0.40	0.002	0.062	0.69	0.003	0.055	0.59	0.002	0.048	0.50	0.002
SELFEMPLOYED	-0.015	-0.16	-0.001	-0.010	-0.11	0.000	-0.024	-0.25	-0.001	-0.018	-0.19	-0.001
UNEMPLOYED	-0.071	-0.77	-0.003	-0.063	-0.69	-0.003	-0.054	-0.58	-0.002	-0.058	-0.61	-0.002
AT HOME	-0.160	-1.62	-0.006	-0.141	-1.48	-0.006	-0.144	-1.49	-0.006	-0.158	-1.57	-0.006
STUDENT	0.002	0.02	0.000	0.024	0.23	0.001	0.007	0.07	0.000	0.000	0.00	0.000
RETIRED	-0.209*	-1.90	-0.007	-0.203*	-1.87	-0.007	-0.204*	-1.86	-0.007	-0.199*	-1.76	-0.007
OTHER	0.224	1.42	0.012	0.222	1.42	0.012	0.229	1.46	0.012	0.252	1.56	0.013
Region												
WESTERN EUROPE	0.119**	2.32	0.005	0.087*	1.71	0.004	0.057	1.12	0.002	0.110**	2.07	0.004
Pseudo R2	0.063			0.053			0.053			0.070		
Number of observations	18862			18887			18877			18155		
Prob > chi2	0.000			0.000			0.000			0.000		

Notes: The reference group consists of MAN, AGE<30, LOWEST CLASS, NOT HAVE CHILDREN, MARRIED, FULL-TIME EMPLOYEE, EASTERN EUROPE. The symbols *, **, *** represent statistical significance at the 10%, 5% and 1% levels, respectively. Robust standard errors.

Table 5: 2SLS Focusing on Environmental Membership

WEIGHTED 2SLS	2SLS	*(17)*	FIRST STAGE REGRESSION		2SLS	*(18)*	FIRST STAGE REGRESSION		2SLS	*(19)*	FIRST STAGE REGRESSION	
	Coeff.	*t-Stat.*	*Coeff.*	*t-Stat.*	*Coeff.*	*t-Stat.*	*Coeff.*	*t-Stat.*	*Coeff.*	*t-Stat.*	*t-Stat.*	*Coeff.*
Environmental Motivation (m)												
WILLINGNESS TO GIVE INCOME	0.353***	3.61										
WILLINGNESS TO INCREASE TAXES					0.232***	4.65						
CONTRIBUTE AT NO COSTS									-0.267***	-4.29		
Gender												
FEMALE	-0.019**	-2.09	0.075***	6.20	-0.005	-1.07	0.059***	4.92	0.001	0.16	-0.025**	-2.07
Age												
AGE 30-39	0.014*	1.78	-0.028	-1.51	0.010	1.53	-0.023	-1.23	0.016**	2.28	0.043**	2.17
AGE 40-49	0.032***	3.28	-0.060***	-2.98	0.013**	1.97	-0.011	-0.55	0.017**	2.33	0.019	0.89
AGE 50-59	0.048***	4.48	-0.065***	-2.95	0.031***	4.20	-0.029	-1.34	0.041***	4.89	0.055**	2.42
AGE 60-69	0.044***	3.49	-0.060**	-2.17	0.030***	3.26	-0.035	-1.28	0.054***	4.58	0.119***	4.34
AGE 70+	0.073***	3.86	-0.148***	-4.51	0.034***	3.12	-0.059*	-1.83	0.049***	3.85	0.109***	3.34
Parental Effect												
CHILD	-0.008	-0.89	-0.002	-0.11	-0.014*	-1.92	0.018	0.86	-0.023***	-2.90	-0.050**	-2.34
Formal and Informal Educ.												
EDUCATION	-0.002	-1.40	0.017***	15.84	0.000	-0.39	0.017***	15.26	-0.001	-0.99	-0.018***	-15.62
POLITICAL DISCUSSION	-0.033**	-2.27	0.143***	15.91	-0.013*	-1.76	0.131***	14.66	-0.022**	-2.24	-0.148***	-16.42
Marital Status												
WIDOWED	0.024*	1.77	-0.093***	-3.92	0.004	0.47	-0.065***	-2.79	0.001	0.17	0.043*	1.89
DIVORCED	0.024**	2.03	-0.079***	-3.50	0.013	1.61	-0.073***	-3.27	0.013	1.49	0.064***	2.92
SEPARATED	-0.004	-0.19	0.020	0.48	0.007	0.45	-0.014	-0.32	0.022	1.33	0.069	1.62
NEVER MARRIED	0.025***	3.25	-0.029*	-1.65	0.022***	3.61	-0.032*	-1.89	0.021***	3.27	0.021	1.16

Employment Status												
PART TIME EMPLOYEE	0.009	0.89	0.030	1.34	0.016*	1.96	0.019	0.87	0.014	1.62	-0.024	-1.03
SELFEMPLOYED	-0.013	-1.13	0.071***	3.10	0.001	0.09	0.045*	1.93	-0.006	-0.59	-0.062**	-2.52
UNEMPLOYED	0.013	1.11	-0.074***	-3.24	0.002	0.27	-0.065***	-2.89	0.016	1.59	0.105***	4.67
AT HOME	-0.009	-1.00	-0.001	-0.04	-0.001	-0.20	-0.038*	-1.75	0.016*	1.69	0.096***	4.32
STUDENT	-0.040***	-2.85	0.082***	2.97	-0.015	-1.55	0.032	1.15	-0.034***	-2.92	-0.092***	-3.16
RETIRED	0.021	1.48	-0.114***	-4.86	0.005	0.66	-0.105***	-4.71	0.025**	2.05	0.163***	7.54
OTHER	0.022	1.21	-0.004	-0.08	0.016	1.00	0.037	0.86	0.012	0.73	-0.049	-1.11
Region												
WESTERN EUROPE	0.111***	6.25	-0.177***	-15.69	0.073***	11.40	-0.106***	-9.42	-0.024	-1.37	-0.271***	-23.66
Instrument:												
PERCEIVED LEVEL OF DISHONESTY			-0.009***	-4.06			-0.014***	-6.20			0.012***	5.30
Test of excluded instruments			16.45***				38.50				28.10***	
Anderson canon. cor. LR statistic	21.552***				47.697***				32.857***			
Anderson-Rubin test	43.86***				41.73***				40.040***			

Notes: The reference group consists of MAN, AGE<30, NOT HAVE CHILDREN, MARRIED, FULL-TIME EMPLOYEE, EASTERN EUROPE. The symbols *, **, *** represent statistical significance at the 10%, 5% and 1% levels, respectively. Robust standard errors.

Table 6: The Impact of Environmental Motivation on Membership Participation in Single Countries

96 REGRESSIONS	*WEIGHTED ORDERED PROBIT ESTIMATIONS*			*WEIGHTED ORDERED PROBIT ESTIMATIONS*			*WEIGHTED ORDERED PROBIT ESTIMATIONS*		
VARIABLE:	WILLINGNESS TO GIVE INCOME (32 REGRESSIONS)			WILLINGNESS TO INCREASE TAXES (32 REGRESSIONS)			CONTRIBUTE AT NO COSTS (32 REGRESSIONS)		
COUNTRIES									
Western European Countries									
Germany	0.586***	4.47	0.012	0.365***	3.24	0.011	-0.244**	-2.47	-0.008
Austria	0.299***	4.51	0.041	0.193***	3.29	0.028	-0.175***	-3.03	-0.025
Belgium	0.263***	5.36	0.046	0.159***	3.33	0.029	-0.241***	-5.05	-0.042
Great Britain	1.119***	3.51	0.001	0.887***	4.51	0.003	-0.030	-0.14	-0.001
Denmark	0.207***	3.12	0.041	0.224***	3.63	0.044	-0.234***	-3.56	-0.046
Finland	0.402***	3.60	0.027	0.259**	2.44	0.021	-0.187*	-1.90	-0.016
France	0.269***	3.02	0.008	0.141*	1.74	0.005	-0.017	-0.20	-0.001
Iceland	0.161	1.29	0.013	0.291**	2.25	0.022	-0.077	-0.65	-0.006
Ireland	0.316*	1.88	0.007	0.102	0.79	0.002	-0.116	-1.02	-0.003
Italy	0.422***	4.15	0.022	0.273***	3.64	0.017	-0.267***	-3.89	-0.016
Luxembourg	0.211***	3.06	0.035	0.137**	2.11	0.023	-0.116*	-1.88	-0.019
Malta	0.060	0.56	0.003	-0.078	0.66	-0.004	-0.023	-0.20	-0.001
Netherlands	0.240***	4.03	0.095	0.232***	4.06	0.091	-0.227***	-3.34	-0.089
North Ireland	0.538***	2.65	0.021	0.692***	3.17	0.018	-0.075	-0.50	-0.004
Portugal	2.473***	4.22	0.000	0.095	0.39	0.000	0.148	0.72	0.000
Spain	0.481***	3.77	0.010	0.237**	2.14	0.006	-0.306**	-2.38	-0.007
Sweden	0.237***	2.73	0.040	0.074	0.98	0.013	-0.133*	-1.86	-0.022
Eastern European Countries									
Belarus	0.229	1.39	0.005	0.335***	2.38	0.007	-0.109	-0.84	-0.003
Bulgaria	0.633***	3.86	0.009	0.437***	2.83	0.008	-0.190	-1.34	-0.005
Croatia	0.146	1.10	0.004	-0.006	-0.03	0.000	-0.122	-0.91	-0.004
Czech Republic	0.234***	2.79	0.028	0.141**	2.07	0.017	-0.107*	-1.66	-0.013
Estonia	0.608***	3.89	0.015	0.312*	1.78	0.011	-0.216	-1.65	-0.008

Greece	0.309***	3.94	0.049	0.225***	3.35	0.037	-0.044	-0.70	-0.007
Hungary	0.435***	3.17	0.010	0.360***	2.98	0.011	-0.274***	-3.28	-0.010
Latvia	0.312*	1.74	0.001	0.427***	2.65	0.010	-0.502**	-1.97	-0.010
Lithuania	1.078***	4.08	0.002	0.520***	3.13	0.007	-0.254	-1.21	-0.003
Poland	0.312**	2.15	0.004	0.362**	2.06	0.004	-0.048	-0.39	-0.001
Romania	-0.116	-0.82	-0.003	0.032	0.21	0.001	0.216	1.37	0.010
Russia	0.422***	3.99	0.005	0.135	0.91	0.002	0.307**	2.34	0.004
Slovak Republic	0.365***	3.57	0.015	0.347***	3.95	0.016	-0.173**	-2.22	-0.009
Slovenia	0.152	0.90	0.010	0.021	0.16	0.001	0.111	1.21	0.007
Ukraine	0.120	0.62	0.001	0.386**	2.08	0.002	-0.167	-1.16	-0.001

Notes: Only the attitudinal coefficient is reported in the Table. Regressions without the economic situation. The symbols *, **, *** represent statistical significance at the 10%, 5% and 1% levels, respectively. Robust standard errors.

Table 7: The Impact of Environmental Motivation on Unpaid Work in Single Countries

96 REGRESSIONS	*WEIGHTED ORDERED PROBIT ESTIMATIONS*			*WEIGHTED ORDERED PROBIT ESTIMATIONS*			*WEIGHTED ORDERED PROBIT ESTIMATIONS*		
VARIABLE:	WILLINGNESS TO GIVE INCOME (32 REGRESSIONS)			WILLINGNESS TO INCREASE TAXES (32 REGRESSIONS)			CONTRIBUTE AT NO COSTS (32 REGRESSIONS)		
COUNTRIES									
Western European Countries									
Germany	0.650***	3.40	0.004	0.607***	4.14	0.005	-0.330**	-2.13	-0.005
Austria	0.164*	1.71	0.007	0.044	0.52	0.002	-0.117	-1.56	-0.006
Belgium	0.107*	1.68	0.006	0.073	1.13	0.004	0.006	0.08	0.000
Great Britain	0.229**	2.11	0.024	0.110	1.04	0.012	-0.171*	-1.68	-0.017
Denmark	0.193	1.61	0.007	0.058	0.60	0.002	-0.181	-1.52	-0.007
Finland	0.198	1.07	0.007	0.254	1.40	0.007	-0.156	-1.27	-0.005
France	0.226**	2.03	0.003	0.150	1.30	0.002	-0.085	-0.79	-0.001
Iceland	0.339	1.35	0.009	0.328	1.56	0.009	0.019	0.12	0.001
Ireland	-0.132	-0.65	0.000	-0.038	-0.21	0.000	0.154	0.77	0.000
Italy	0.410***	3.16	0.013	0.270***	2.90	0.009	-0.352***	-3.94	-0.012
Luxembourg	0.211**	2.10	0.016	0.099	1.01	0.008	-0.106	-1.18	-0.008
Malta	0.193	1.22	0.011	-0.053	-0.37	-0.003	-0.014	-0.11	-0.001
Netherlands	0.117	0.90	0.007	0.240*	1.84	0.013	0.154	1.06	0.009
North Ireland	1.513**	2.34	0.000	0.576***	3.15	0.001	-0.263	-0.80	0.000
Portugal	9.210	1.28	0.000	-0.382	-1.30	0.000	0.032	0.12	0.000
Spain	1.141***	3.76	0.001	0.391***	3.01	0.004	-0.406**	-2.40	-0.004
Sweden	0.346**	2.13	0.013	0.178	1.37	0.007	-0.151	-1.60	-0.006
Eastern European Countries									
Belarus	0.118	1.27	0.003	0.060	0.63	0.001	0.178**	2.04	0.005
Bulgaria	0.479***	3.50	0.007	0.277**	2.01	0.005	-0.174	-1.25	-0.003
Croatia	0.167	1.15	0.003	-0.063	-0.31	-0.001	-0.039	-0.26	-0.001
Czech Republic	0.130	1.39	0.008	0.156*	1.72	0.009	-0.162*	-1.77	-0.009
Estonia	0.746***	3.99	0.000	0.249	1.10	0.000	-0.288	-1.60	0.000

Greece	0.226***	2.72	0.035	0.111	1.64	0.018	0.049	0.74	0.008
Hungary	0.362***	3.42	0.011	0.211*	1.86	0.008	-0.137	-1.46	-0.005
Latvia	0.009	0.06	0.000	0.008	0.07	0.000	0.226	0.23	0.001
Lithuania	0.886***	3.87	0.003	0.741***	3.55	0.006	0.009	0.03	0.000
Poland	1.010***	3.48	0.000	0.028	0.13	0.000	-0.367**	-2.40	0.000
Romania	-0.127	-0.73	-0.001	0.076	0.50	0.001	0.318	1.12	0.003
Russia	0.337***	2.80	0.003	0.309*	1.85	0.004	0.189	1.19	0.003
Slovak Republic	0.358***	2.63	0.013	0.341***	3.08	0.013	-0.197**	-2.29	-0.009
Slovenia	0.126	0.71	0.008	0.016	0.12	0.001	0.007	0.07	0.070
Ukraine	0.175	0.62	0.000	0.586***	2.84	0.000	-1.183***	-4.74	0.000

Notes: Only the attitudinal coefficient is reported in the Table. Regressions without the economic situation. The symbols *, **, *** represent statistical significance at the 10%, 5% and 1% levels, respectively. Robust standard errors.

VI. MACRO EXTENSION

In a next step we are going to explore whether the previous results remain robust at the macro level. We therefore extend the number of countries to include those from the World Values Survey (see Appendix), and build averages out of the country values. However, we do not recode the original environmental motivation variables, which means that higher values are related to lower environmental motivation for the first two variables (willingness to give income and willingness to increase taxes). In other words, we measure the non-willingness to give income or increase taxes. We are going to use a simple OLS regression using the latest 2000 data.

We report *beta* or *standardized* regression coefficients to reveal the relative importance of the variables employed. To obtain robust standard errors in these estimations, we use the Huber/White/Sandwich estimators of standard errors. We are also providing the elasticity of y with respect to x equivalent to $\partial \log(y) / \partial \log(x)$ evaluated at the multivariate point of means of the data. As control variables we are going to use a proxy for institutional quality, the growth rate, the level of urbanization and the population size AGE > 65. Institutional quality has been measured using the POLITICAL RISK RATING from the International Country Risk Guide. It is an index that measures government stability, internal and external conflicts, corruption, law and order, democratic accountability, bureaucracy quality, ethnic and religious tensions, the military in politics and the socioeconomic and investment conditions. Higher values are correlated with better institutions. We also control for the level of economic development and urbanization. A higher level of urbanization may provide

a larger potential subject pool, but on the other hand it also increases the level of anonymity among individuals. It could be argued that this higher degree of anonymity would lead to higher transaction costs when forming a voluntary organization. We control for the age structure (in line with the micro analysis), as it is expected that the number of individuals who are actively involved in environmental organizations decreases as age increases. The intuition is that older people will not live to enjoy the benefits of preserving resources for later years. However, it can be argued that as people age, they become more cautious, more risk averse and more conservative or compliant (Torgler 2007), and they have more free time, so the correlation can also be positive. *Table 8* presents the results using both dependent variables. We again observe that environmental motivation is correlated with environmental participation, which is in line with the results of the micro level analysis. The coefficients for the two first proxies are always statistically significant, reporting relatively large beta coefficients next to the political factors. Similarly, the calculated elasticities demonstrate that these two environmental motivation regressors are elastic, with a decrease in environmental motivation having more than four times as large an effect on environmental participation. However it should be noted that the coefficient on the third proxy is not statistically significant.

Looking at the control variables we observe that there is a positive relationship between institutional/governance quality proxied by POLITICAL RISK FACTOR and participation in environmental organizations.. However, the factor is more relevant when analyzing membership participation. Looking at the other variables we observe a negative relationship between urbanization and environmental participation, yet the coefficient is only statistically significant when focusing on unpaid work.

Moreover, the variables on economic growth and population structure are hardly statistically significant[8].

Table 8: Macro Evidence

Dep Variable	Membership			Unpaid Work		
Environmental Motivation						
NON-WILLINGNESS TO GIVE INCOME	-0.392***			-0.236*		
	-2.96			**-1.84**		
	-4.130			*-2.657*		
NON-WILLINGNESS TO INCREASE TAXES		-0.406***			-0.369***	
		-4.25			**-3.16**	
		-5.080			*-4.950*	
AGAINST CONTRIBUTE AT NO COSTS			0.258			0.058
			0.93			**0.27**
			2.069			*0.498*
Political Factor						
POLITICAL RISK FACTOR	0.562**	0.501*	0.410*	0.228*	0.163	0.204
	2.00	**1.78**	**1.76**	**1.83**	**1.40**	**1.00**
	4.160	*3.709*	*3.037*	*1.805*	*1.295*	*1.621*
Further Factors						
GDP GROWTH	-0.111	-0.142	-0.050	0.155	0.112	0.188
	-0.82	**-1.08**	**-0.37**	**1.05**	**0.82**	**1.16**
	-0.198	*-0.253*	*-0.089*	*0.297*	*0.214*	*0.358*
URBANIZATION	-0.042	-0.039	-0.129	-0.422	-0.390*	-0.478**
	-0.21	**-0.21**	**-0.61**	**-1.87***	**-1.91**	**-2.03**
	-0.166	*-0.154*	*-0.512*	*-1.799*	*-1.662*	*-2.035*
POPULATION (AGE > 65)	-0.481*	-0.462	-0.425	-0.107	-0.071	-0.119
	-1.67	**-1.57**	**-1.46**	**-0.48**	**-0.32**	**-0.39**
	-1.436	-1.381	-1.269	-0.343	-0.226	-0.380
REGIONS	YES	YES	YES	YES	YES	YES
Prob > F	0.004	0.000	0.024	0.056	0.010	0.074
R^2	0.369	0.375	0.302	0.456	0.513	0.418
# of observations	52	52	52	52	52	52

Notes: Robust standard errors. Beta/standardized coefficients reported. t-values in bold and elasticities in italics. The symbols *, **, *** represent statistical significance at the 10%, 5% and 1% levels, respectively. Regions: Dummies using the common differentiation (Europe, Latin America, North America, North Africa, Sub Saharan Africa, the Pacific, Asia, the Caribbean and Australia).

[8] It should be noted that the impact of economic growth does not when neglecting the political institutions in the regressions.

Table 9: 2SLS Focusing on Membership Participation

Dep. Variable: Membership						
	IV (2SLS) estimation	First Stage Regression	IV (2SLS) estimation	First Stage Regression	IV (2SLS) estimation	First Stage Regression
Environmental Motivation						
NON-WILLINGNESS TO GIVE INCOME	-0.310*					
	-1.95					
NON-WILLINGNESS TO INCREASE TAXES			-0.262**			
			-2.17			
AGAINST CONTRIBUTE AT NO COSTS					0.280*	
					1.67	
Political Factor						
POLITICAL RISK FACTOR	0.003**	0.0003	0.002*	-0.001	-0.002	0.015
	2.15	*0.08*	*1.81*	*-0.38*	*-0.45*	*2.92*
Further Factors						
GDP GROWTH	-0.005	-0.014	-0.006	-0.019	-0.0002	-0.003
	-1.15	*-1.00*	*-1.38*	*-1.47*	*-0.03*	*-0.19*
URBANIZATION	0.0003	0.004	0.0002	0.004	-0.0004	-0.002
	0.33	*1.36*	*0.24*	*1.60*	*-0.37*	*-0.56*
POPULATION (AGE > 65)	-0.004	0.007	-0.005	0.005	0.0003	-0.023
	-0.81	*0.43*	*-1.14*	*0.31*	*0.03*	*-1.24*
REGIONS	YES	YES	YES	YES	YES	YES
Instrument:						
CHILD QUALITIES: TOLERANCE		-0.836*		-0.990**		0.924*
AND RESPECT FOR OTHER PEOPLE		*-1.92*		*-2.47*		*1.78*
Test of excluded instruments		3.67*		6.09**		3.16*
Identification/IV relevance test:						
Anderson canon. corr. LR statistic	4.479**		7.232***		3.881**	
Weak identification statistics:						
Anderson-Rubin test	4.26**		4.26**		4.26**	

Notes: t-values in italics. The symbols *, **, *** represent statistical significance at the 10%, 5% and 1% levels, respectively. Regions: Dummies using the common differentiation (Europe, Latin America, North America, North Africa, Sub Saharan Africa, the Pacific, Asia, the Caribbean and Australia).

Table 10: 2SLS Focusing on Unpaid Work

Dep. Variable: Unpaid Work						
	IV (2SLS) estimation	First Stage Regression	IV (2SLS) estimation	First Stage Regression	IV (2SLS) estimation	First Stage Regression
Environmental Motivation						
NON-WILLINGNESS TO GIVE INCOME	-0.187*					
	-1.73					
NON-WILLINGNESS TO INCREASE TAXES			-0.158**			
			-2.11			
AGAINST CONTRIBUTE AT NO COSTS					0.169	
					1.46	
Political Factor						
POLITICAL RISK FACTOR	0.001	0.0003	0.0003	-0.001	-0.002	0.015***
	0.64	*0.08*	*0.34*	*-0.38*	*-0.87*	*2.92*
Further Factors						
GDP GROWTH	0.001	-0.014	0.001	-0.019	0.004	-0.003
	0.30	*-1.00*	*0.22*	*-1.47*	*1.19*	*-0.19*
URBANIZATION	-0.001	0.004	-0.001*	0.004	-0.001*	-0.002
	-1.26	*1.36*	*-1.70*	*1.60*	*-1.77*	*-0.56*
POPULATION (AGE > 65)	0.001	0.007	0.0005	0.005	0.004	-0.023
	0.29	*0.43*	*0.18*	*0.31*	*0.71*	*-1.24*
REGIONS	YES	YES	YES	YES	YES	YES
Instrument:						
CHILD QUALITIES: TOLERANCE		-0.836*		-0.990**		0.924*
AND RESPECT FOR OTHER PEOPLE		*-1.92*		*-2.47*		*1.78*
Test of excluded instruments		3.67*		6.09**		3.16*
Identification/IV relevance test:						
Anderson canon. corr. LR statistic	4.479**		7.232***		3.881**	
Weak identification statistics:						
Anderson-Rubin test	3.71*		3.71*		3.71*	

Notes: t-values in italics. The symbols *, **, *** represent statistical significance at the 10%, 5% and 1% levels, respectively. Regions: Dummies using the common differentiation (Europe, Latin America, North America, North Africa, Sub Saharan Africa, the Pacific, Asia, the Caribbean and Australia).

In line with the micro estimations we also present 2SLS regressions. It should be noted that we are not able to use the previous instrument as it would substantially reduce the number of observations. We therefore use an alternative instrument, namely CHILD QUALITIES: TOLERANCE AND RESPECT FOR OTHER

PEOPLE[9]. It measures the individuals' willingness to educate their children on social norms. Thus, we would predict a statistically significant correlation between our environmental motivational variables and such a variable. Additionally, tolerance and other related attitudes are features of affective education clearly linked to cooperation and interaction among people lead which generate children's abilities related to social capital issues (Nixon et al, 1996). This relationship is confirmed when looking at the first stage regressions in *Table 9* and *10*. We also conduct the Anderson's likelihood-ratio test. A failure to reject the null hypothesis would call the identification status of the estimated equation into question. *Table 9* and *10* show that we can reject the null hypothesis that our specified instrument is redundant. In general, the results obtained in the six 2SLS estimations indicate that our previous findings on the key hypothesis remain robust. We observe a relatively robust relationship between environmental motivation and environmental participation.

VII. CONCLUSIONS

This paper investigates whether environmental motivation affects environmental behavior. We therefore first present a model that explores the relationship between environmental motivation and volunteering, and then test empirically the hypothesis generated by that theoretical model. Behavioral engagement was proxied through the reported participation in environmental organizations. We focused on two aspects of participation, namely being a member and doing unpaid work for environmental organizations. We also use three different proxies for environmental motivation, two

[9] Question: Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five. (CODE FIVE ONLY). Tolerance and respect for other people (0 = Not mentioned, 1=Important).

of which measure pro-environmental attitudes, namely the willingness to give part of the own income to prevent environmental pollution, and whether the respondent would agree to an increase in taxes if the extra money is used to prevent environmental pollution. In addition, we have explored a variable that measures people's incentive to free-ride (profit without incurring costs). The motivation behind such a study is the observation that deterrence models fail to predict the relatively high level of compliance in various situations where a private cost is incurred in order to provide a public good. Previous literature on this paradox covers situations such as tax compliance despite the low chance of being audited and not littering despite the low probability of getting caught and penalized. This paper provides empirical support for the idea that environmental motivation indeed affects individuals' voluntary involvement in environmental organizations. By using a large micro-data set covering not less than 32 different countries we are able to provide a comprehensive summary for every single country (almost 200 regressions). In addition, we check the robustness of the results using a macro approach, and here we extend the number of countries by including data from the World Values Survey. In addition, we have explored potential endogeneity problems. The results show robust findings and therefore indicate that attitudinal questions help to explain behavioral consequences. Environmental motivation, environmental morale or pro-environmental attitudes are highly relevant to an understanding of why people have a higher willingness to be involved in environmental protection. However, it should be noted that these social norms work more strongly towards membership of an environmental organization rather than doing unpaid work in these groups. Unpaid work is associated with higher opportunity costs which may help to explain such a difference.

The results of our analyses present an insight into voluntary participation and whose preferences are being served by voluntary provision of a public environmental good. Considering the difficulty and expense involved in regulating to protect the environment, (and the political sensitivity of such actions), policymakers seeking the most effective ways to address the consequences of climate change and ecological degradation could find efficient solutions through crowding-in these motivations.

These empirical findings are not only useful in the context of environmental issues, but can also be applied to voluntary participation and provision of public goods more generally. Ostrom (2000, 154) claims that the (pre-Mancur Olson) idea of collective action arising organically from groups in order to solve their own dilemmas was "not entirely misguided", and maintains that institutional, cultural and biophysical contexts may play a role in determining which individuals join collective action groups. Ostrom also raises the uncomfortable point that past policy based on payoff structures appealing to the rational egoists could have been misdirected. In fact, this could have worked against the original intention of the policy, crowding out social norms that encourage cooperative behavior rather than encouraging collective action (Ostrom 2000, 154).

With respect to environmental issues, by focusing on willingness to pay for environmental quality, past policy may have placed an inappropriate emphasis on financial values for the environment. Moreover, as pro-social behavior is both voluntary and conditioned by observed norms of behavior in society, there exists a stronger chance to crowd in these behaviors than to persist in seeking the appropriate monetary value for the environment based on an individually stated willingness to incur private costs in order to supply a public good. In seeking policy implications from the current study, we could look to policies supporting formation of new

community based organizations and partnerships with existing organizations. A partnership that matches community effort could increase the warm glow ‘g’ for the purely egoistic contributor while also increasing the ‘G’ for the purely altruistic contributor. If policies cease to be aimed at the rational egoist and instead are aimed at crowding in existing motivations and pro-social behaviors, environmental quality may be ensured at lower transaction and policing costs. Finally, it should be noted that further investigations are required to gain a better understanding of what shapes individuals’ environmental motivation. This would provide a better foundation to derive policy implications to promote, encourage and maintain a higher willingness to contribute to the environment.

Table A1:

Description of control variables

Variable	**Definitions**
Micro Analysis	
AGE	AGE 30-39, AGE40-49, AGE 50-59, AGE 60-69, AGE +70 (AGE -30 in the reference group,)
GENDER	WOMAN (MAN in the reference group)
PARENT EFFECT	CHILD (not having children in the reference group)
FORMAL AND INFORMAL EDUCATION	EDUCATION: What is the highest educational level that you have attained? 1. No formal education 2. Incomplete primary school 3. Completed primary school 4. Incomplete secondary school: technical/vocational type 5. Complete secondary school: technical/vocational type 6. Incomplete secondary: university-preparatory type 7. Complete secondary: university-preparatory type 8. Some university-level education, without degree 9. University-level education, with degree
	POLITICAL DISCUSSION: When you get together with your friends, would you say you discuss political matters? 1. Never 2. Occasionally 3. Frequently
MARITAL STATUS	WIDOWED; DIVORCED; SEPARATED; NEVER MARRIED (MARRIED in the reference group)
ECONOMIC SITUATION	People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the: UPPER CLASS, MIDDLE CLASS (the rest, WORKING CLASS and LOWER CLASS, in the reference group).
EMPLOYMENT STATUS	PART-TIME EMPLOYEE, SELFEMPLOYED, UNEMPLOYED, AT HOME, STUDENT, RETIRED, OTHER (FULL TIME EMPLOYED in the reference group).
Macro Analysis	
POLITICAL RISK FACTOR	ICRG index covering 12 factors (government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tension, law and order, ethnic tensions, democratic accountability, and bureaucracy). For a detailed description see: http://www.icrgonline.com/page.aspx?page=icrgmethods#Background_of_the_ICRG_Rating_System.
GDP GROWTH	GDP per capita growth (annual %). Source: World Development Indicators.
URBANIZATION	Urban population (% of total). Source: World Development Indicators.
POPULATION (AGE > 65)	Population ages 65 and above (% of total). Source: World Development Indicators.

Table A2: Descriptive Statistics Micro Analysis

Variables	Obs	Mean	Std. Dev.	Min	Max
Key variables					
ENVIRONMENTAL ATTITUDES (INCOME)	38877	1.620	0.885	0	3
ENVIRONMENTAL ATTIDUES (TAXES)	38834	1.412	0.877	0	3
ENVIRONMENTAL FREE-RIDING	39038	1.996	0.894	0	3
MEMBER VOLUNTARY ENVIRONMENTAL ORGANIZATION	41125	0.049	0.216	0	1
WORKING VOLUNTARY ENVIRONMENTAL ORGANIZATION	41125	0.020	0.140	0	1
Control Variables					
AGE 30-39	40963	0.197	0.398	0	1
AGE 40-49	40963	0.191	0.393	0	1
AGE 50-59	40963	0.15	0.357	0	1
AGE 60-69	40963	0.135	0.342	0	1
AGE 70+	40963	0.102	0.302	0	1
WOMAN	41114	0.54	0.498	0	1
CHILDREN	41125	0.077	0.266	0	1
EDUCATION	39840	18.712	5.125	5	74
POLITICAL DISCUSSION	40713	1.886	0.654	1	3
UPPER CLASS	21335	0.136	0.343	0	1
MIDDLE CLASS	21335	0.338	0.473	0	1
WIDOWED	39861	0.097	0.295	0	1
DIVORCED	39861	0.07	0.256	0	1
SEPARATED	39861	0.016	0.124	0	1
NEVER MARRIED	39861	0.228	0.42	0	1
PART TIME EMPLOYED	40919	0.068	0.252	0	1
SELFEMPLOYED	40919	0.052	0.222	0	1
UNEMPLOYED	40919	0.229	0.42	0	1
AT HOME	40919	0.095	0.293	0	1
STUDENT	40919	0.061	0.24	0	1
RETIRED	40919	0.073	0.261	0	1
OTHER	40919	0.018	0.131	0	1
Instrument					
PERCEIVED LEVEL OF DISHONESTY	32903	13.098	2.496	5	20

Table A3: Countries Macro Analysis

ALBANIA	LITHUANIA
ARGENTINA	LUXEMBOURG
AUSTRIA	MALTA
BANGLADESH	MEXICO
BELARUS	MOLDOVA
BELGIUM	NETHERLANDS
BULGARIA	PERU
CANADA	PHILIPPINES
CHILE	POLAND
CHINA	PORTUGAL
CROATIA	ROMANIA
CZECH REPUBLIC	RUSSIA
DENMARK	SINGAPORE
ESTONIA	SLOVAKIA
FINLAND	SLOVENIA
FRANCE	SOUTH AFRICA
GERMANY	SPAIN
GREECE	SWEDEN
HUNGARY	TANZANIA
ICELAND	TURKEY
INDIA	UGANDA
IRELAND	UKRAINE
ITALY	UNITED KINGDOM
JAPAN	UNITED STATES
SOUTH KOREA	VIETNAM
LATVIA	ZIMBABWE

Table A4: Descriptive Statistics Macro Analysis

	Obs	Mean	Std. Dev.	Min.	Max.
MEMBERSHIP	60	0.057	0.070	0.002	0.451
UNPAID WORK	58	0.039	0.051	0.002	0.277
NON-WILLINGNESS TO GIVE INCOME	57	2.248	0.270	1.583	3.052
NON-WILLINGNESS TO INCREASE TAXES	57	2.039	0.307	1.380	2.806
AGAINST CONTRIBUTE AT NO COSTS	57	2.472	0.253	1.866	3.135
POLITICAL RISK FACTOR	140	66.383	13.970	31.083	95.250
GDP GROWTH	186	2.507	4.396	-16.580	18.940
URBANIZATION	206	54.783	24.734	8.60	100
POPULATION (AGE > 65)	188	6.888	4.581	1.08	18.21
Instrument:					
CHILD QUALITIES: TOLERANCE AND RESPECT FOR OTHER PEOPLE	68	0.705	0.0964	0.525	0.923

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